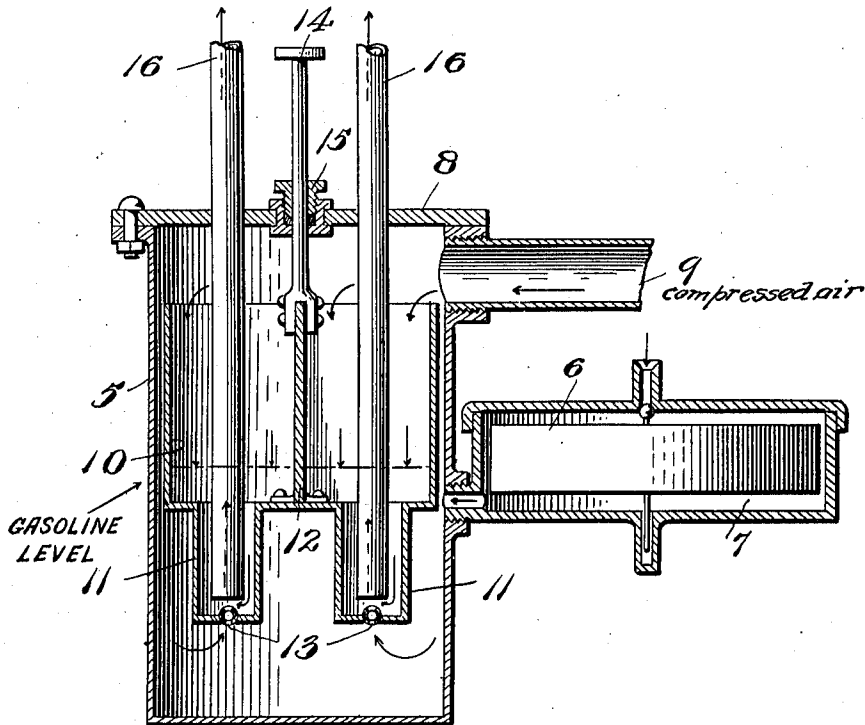


F. H. WALKER.
CARBURETER FOR STARTING INTERNAL COMBUSTION ENGINES.
APPLICATION FILED APR. 21, 1911.

1,026,889.

Patented May 21, 1912.



WITNESSES

C. H. Davies

W. H. Davies

INVENTOR

FRANK H. WALKER

by M. B. Sturges
Attorneys.

UNITED STATES PATENT OFFICE.

FRANK H. WALKER, OF LINCOLN, NEBRASKA.

CARBURETER FOR STARTING INTERNAL-COMBUSTION ENGINES.

1,026,889.

Specification of Letters Patent.

Patented May 21, 1912.

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To all whom it may concern:

Be it known that I, FRANK H. WALKER, a citizen of the United States, residing at Lincoln, in the county of Lancaster and State of Nebraska, have invented certain new and useful Improvements in Carbureters for Starting Internal-Combustion Engines, of which the following is a specification.

The carbureter which is the subject of the present invention is designed more particularly for use in connection with internal-combustion engines for starting the same; and it is the object of the invention to provide a carbureter of this kind embodying certain novel features of construction to be hereinafter described and claimed, whereby the volume of the charge may be varied to suit the demand of the engine which varies with changes in the weather, a heavier charge being required in cold weather.

The device is designed for placing a priming of fuel into the engine cylinder by pressure instead of doing so by means of filling a priming cup and then turning it in as usual. In this way the charge may be sprayed in and it is thus forced to mix with the air in the cylinder so that a spark will ignite the charge at once. By the priming cup method, unless the cylinder is warm, there is no certainty of firing the charge by a spark except the piston be moved in against compression as in cranking.

In order that the invention may be better understood, reference is had to the accompanying drawing forming a part of this specification, in which drawing a sectional view of the carbureter is shown.

Referring specifically to the drawing, 5 denotes a closed vessel in which a supply of liquid hydrocarbon is kept at a constant level by an ordinary float valve 6 located in a chamber 7 mounted on one side of the vessel and in communication therewith. The float chamber is connected to a suitable source of supply (not shown). The top of the vessel 5 is closed by a cover 8, and said vessel is entered near the top by a pipe 9 which leads to a suitable valve-controlled source of compressed air.

In the vessel 5 is located a reservoir 10 which is movable up and down therein for a purpose to be presently described. The reservoir is a vessel which is open at the top, and has at its bottom a number of pockets 11, the number of said pockets cor-

responding to the number of engine cylinders. The reservoir is also divided by a partition 12 into compartments each of which has one of the pockets 11. Each pocket is provided with a valve-controlled opening 13 through which the liquid hydrocarbon contained in the vessel 5 enters said pocket and rises therein and in the reservoir until the same level is reached as that which is maintained in the vessel by the float valve 6. To the reservoir is connected a stem 14 which passes out of the vessel 5 through a stuffing box 15 on the cover 8 thereof. By means of this stem, the reservoir may be moved up and down in the vessel to regulate the extent it is immersed in the liquid contents thereof. The vessel 5 is also entered by pipes 16 which lead to the intake of the engine cylinders. Each of these pipes dips into the liquid contents of one of the compartments of the reservoir, and also extends at its lower end into the pocket thereof, said end being open so that the liquid contents in the pocket may enter the pipe.

The operation of the carbureter is as follows: Compressed air enters the vessel 5 through the pipe 9, and acting upon the surface of the liquid hydrocarbon in the reservoir causes said liquid to flow out through the pipes 16 to the respective engine cylinders, the air following, and enough air being admitted to form an explosive charge in the engine cylinder, which is ignited by any suitable means for the purpose of starting the engine. In cold weather a heavier charge is required than in warm weather, and to obtain this, the reservoir 10 is lowered in the vessel 5 by means of the stem 14, which lowers the pockets 11 in the liquid hydrocarbon, and thus increases the extent to which said pockets are immersed, so that a greater volume of liquid is forced into the pipes 16 and delivered to the engine cylinders. The volume of the charge can therefore be readily varied to suit the demands of the engine.

The device is used only for starting the engine, and the amount of air admitted is regulated (after the oil has been forced from the reservoir and tubes) by air flowing until a certain fixed pressure is reached, which will trip the igniter either by causing the piston to start outward on the explosive stroke, or by some other automatic means, as an ordinary compression igniter. The explosion, of course, will tell the time for

air to be cut off. The raising and lowering of the reservoir 10 is effective because the pockets 11 are in practice to be made small enough so that the reservoir, when lowered 5 below the level of the oil, will afford considerably more room for oil. The structure of the valves 13 is immaterial, they being so arranged that they close when the oil and air are discharging.

10 I claim:

1. A carbureter comprising a closed vessel, a liquid fuel supply therefor, a reservoir immersed in the liquid contents of the vessel and adjustable to vary the extent the 15 reservoir is immersed, said reservoir having an inlet for said contents, a delivery pipe extending into the reservoir, and means for placing air pressure on the liquid contents of the reservoir.

20 2. A carbureter comprising a closed vessel, a liquid fuel supply therefor, a reservoir immersed in the liquid contents of the vessel and adjustable therein to vary the extent

the reservoir is immersed, said reservoir having a bottom pocket provided with a 25 valve-controlled inlet, a delivery pipe entering the vessel and extending through the reservoir into the pocket, and means for placing air pressure on the liquid contents of the reservoir.

3. A carbureter comprising a vessel having air and liquid fuel inlets, and an outlet 30 extending below the level of the liquid fuel, a vessel within said vessel, means for adjusting the second-mentioned vessel up or 35 down with respect to the liquid fuel level within the first-mentioned vessel, and a valve cutting off the fuel supply from the first-mentioned to the second-mentioned vessel when the carbureter is discharging.

40 In testimony whereof I affix my signature in presence of two witnesses.

FRANK H. WALKER.

Witnesses:

W. C. CROOKS,
J. N. HEATES.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."